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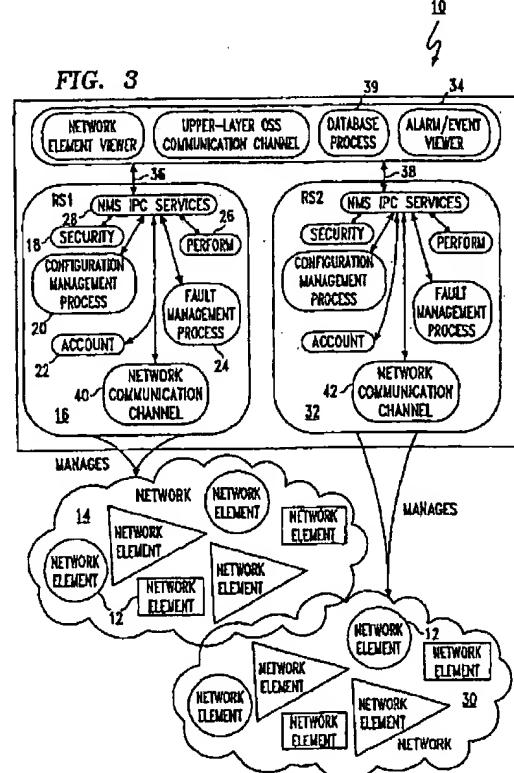
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(54) Design for scalable network management systems

(57) A system and methodology for building highly scalable Network Management Systems (NMS)s for the management of large voice and data networks is provided. The NMS of the present invention is designed to manage a plurality of network elements communicating through network controlled links. The elements are combined into management groups of no more than n elements. A first functional subsystem controls and manages the communication functions associated with a first group of elements. Each function or process inside the subsystem is guaranteed to communicate with only one instance of every other type of process or function. As additional network elements are added to the system, additional management groups are also added, one functional subsystem for every management group of elements. The plurality of other functional subsystems are substantially the same as the first functional subsystem. Limiting the management process to intra-subgroup communications greatly simplifies expansion of the system. When a total of m management groups exist, at least $(m - 1)$ functional subsystems are replicated from the first NMS subsystem. Thus, the network is scaled up by using size-limited subsystems.

FIG. 3



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DOCUMENTS CONSIDERED TO BE RELEVANT									
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.)						
X	US 5 768 501 A (LEWIS LUNDY) 16 June 1998 (1998-06-16) * abstract * * figure 3 * * column 1, line 14-29 * * column 2, line 5-10 * * column 2, line 22-29 * * column 2, line 46-65 * * column 3, line 17-40 * * column 4, line 45-67 * * column 5, line 53 - column 6, line 25 * * column 7, line 12-38 * * column 13, line 16-24 *	1-6, 8-10, 12-16, 20,21	H04L12/24						
A		7,11, 17-19							
A	RAM RAO VORUGANTI: "A GLOBAL NETWORK MANAGEMENT FRAMEWORK FOR THE '90S" IEEE COMMUNICATIONS MAGAZINE, IEEE SERVICE CENTER, PISCATAWAY, N.J, US, vol. 32, no. 8, 1 August 1994 (1994-08-01), pages 74-83, XP000471045 ISSN: 0163-6804 * page 76, column 2 *	1-6, 12-16	TECHNICAL FIELDS SEARCHED (Int.Cl.) H04L						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of compilation of the search</td> <td style="width: 33%;">Examiner</td> </tr> <tr> <td>MUNICH</td> <td>25 March 2003</td> <td>Jurca, A</td> </tr> </table> <p>CATEGORY OF CITED DOCUMENTS</p> <p>X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document</p> <p>T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document</p>				Place of search	Date of compilation of the search	Examiner	MUNICH	25 March 2003	Jurca, A
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